CLAIMS

1. A table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, wherein the table includes a plurality of superimposed bases, each base being formed from silicide ceramic or carbide ceramic, wherein at least one of the bases has a fluid passage formed in its superimposition interface.

2. A table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, wherein the table includes a plurality of superimposed bases, each base being formed from a silicon carbide sinter, wherein at least one of the bases has a fluid passage formed in its superimposition interface.

3. The table according to claim 1 or 2, wherein at least one base includes a groove formed in the superimposition interface and forming part of the fluid passage.

4. The table according to claim 1 or 2, further comprising a plurality of adhering layers for joining the bases.

5. The table according to any one of claims 1 to 4, wherein the density of each base is $2.7 g/cm^3$ or greater and the heat conductivity of each base is 30W/mK or greater.

6. The table according to claim 5, wherein at least one base includes a groove formed in the superimposition interface and forming part of the fluid passage, and the table further includes a pipe located in the groove and formed from a high heat conductivity material.

7. The table according to claim 6, wherein the groove has a round cross-sectional form.

8. The table according to claim 6 or 7, wherein the adhering layers at least around the pipe contain powder formed of a high heat conductivity substance.

9. The table according to claim 8, wherein the powder is copper powder, and the pipe is a curved copper pipe.

10. The table according to claim 1 or 2, wherein at least one of the bases is arranged on an uppermost level of the superimposed bases and includes the polishing surface and a groove formed in a surface located on an opposite side of the polishing surface to form part of the fluid passage.

11. The table according to claim 10, wherein the groove has a depth that is 1/3 to 1/2 the thickness of the base.

12. The table according to claims 10 or 11, wherein the groove has a corner, the R of which is 0.3 to 5.

13. The table according to claim 12, wherein the groove is formed through machining before the base is formed through calcination.

14. The table according to claim 1, wherein the Young's modulus of each of the bases is $1.0 kg/cm^2 (x10^6)$ or greater.

15. The table according to claim 2, wherein the Young's modulus of each base is 1.0 to $5.0 kg/cm^2 (x10^6)$.

16. The table according to claim 1 or 2, further comprising a brazing filler layer for joining the bases that contains titanium.

17. The table according to claim 16, wherein the brazing filler layer contains silver as a main component.

18. The table according to claim 17, wherein the content of titanium in the brazing filler layer is 0.1 weight percent to 10 weight percent.

19. The table according to claim 1 or 2, wherein the bases have substantially the same thermal expansion coefficients.

20. The table according to claim 19, wherein the thermal expansion coefficient of each of the bases is 8.0×10^{-6}/degrees Celsius or less.

21. The table according to claim 19, wherein the thermal expansion coefficient of each of the bases is 5.0×10^{-6}/degrees Celsius or less.

22. The table according to claim 21, wherein the difference of the thermal expansion coefficient between the bases is 1.0×10^{-6}/degrees Celsius or less.

23. The table according to claim 1 or 2, wherein the heat conductivity of a first base located near the polishing surface is greater than or equal to that of a second base, which is in a level lower than the first base.

24. The table according to claim 23, wherein the first

base is thinner than the second base.

25. The table according to claim 23, wherein the first base is a dense silicon carbide sinter, and the second base is a porous silicon carbide sinter.

26. The table according to claim 1 or 2, further comprising a plurality of organic adhesive agent layers for joining the bases, wherein a processed modified layer having a thickness of 30 micrometers or less is formed in a joining surface of the organic adhesive agent layer in each of the bases.

27. The table according to claim 26, wherein each of the organic adhesive agent layers has a thickness of 10 micrometers to 50 micrometers.

28. The table according to claim 1 or 2, further comprising a plurality of organic adhesive agent layers for joining the bases, wherein the surface roughness (Ra) of a joining surface of the organic adhesive agent layer in each of the bases is 0.01 micrometers to 2 micrometers.

29. The table according to claim 28, wherein each of the organic adhesive agent layers has a thickness of 10 micrometers to 50 micrometers.

30. A table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, wherein the table is formed of a material, the Young's modulus of which is 1.0kg/cm^2(x10^6) or greater.

31. The table according to claim 30, wherein the material

is ceramic.

32. The table according to claim 30, wherein the material is a silicon carbide sinter.

33. The table according to claim 32, wherein the silicon carbide sinter is dense.

34. The table according to claim 32, wherein the Young's modulus of the silicon carbide sinter is 1.0 to 5.0kg/cm^2(x10^6).

35. A method for performing polishing using a table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, wherein the table includes a plurality of superimposed bases, each base being formed from silicide ceramic or carbide ceramic, wherein at least one of the bases has a fluid passage formed in its superimposition interface, the method comprising the steps of:

rotating the semiconductor wafer; and

contacting the semiconductor wafer with the polishing surface of the table while circulating coolant water in the fluid passage.

36. A method for manufacturing a semiconductor wafer comprising the step of:

performing polishing using a table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, wherein the table includes a plurality of superimposed bases, each base being formed from silicide ceramic or carbide ceramic, wherein at least one of the bases has a fluid passage formed in its superimposition interface, wherein the polishing step includes

the steps of:

rotating the semiconductor wafer; and

contacting the semiconductor wafer with the polishing surface of the table while circulating coolant water in the fluid passage.

37. A method for manufacturing a table having a polishing surface for polishing a semiconductor wafer held by a wafer holding plate of a wafer polishing apparatus, the method comprising the steps of:

arranging a foil-like brazing filler between a plurality of bases, each having a groove formed in its surface and each formed from a silicon carbide sinter; and

heating each of the bases to braze the bases together.